

# Increased risk of bacterial infection if food is exposed to light

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Scanning electron micrograph of *Listeria monocytogenes*. Credit: Wikipedia  
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*Listeria* bacterium found in food, which can infect people and cause temporary gastro-intestinal distress, is a serious health risk for pregnant women and for people with compromised immune systems. According to a dissertation from Umeå University in Sweden, the bacterium, which sometimes causes the lethal illness listeriosis, reacts to light by activating defence mechanisms.

*Listeria monocytogenes*, named after the British surgeon Joseph Lister, is ubiquitous in nature but can sometimes spread to food, especially to unpasteurised dairy products and charcuterie. The *Listeria* bacterium can grow in food stored in the fridge, and if contaminated food is consumed without being properly heated, the bacterium can cause infection.

Researchers have now discovered a new property in *Listeria*; namely that the bacterium activates protective mechanisms when exposed to light. This discovery can, in future, be used by the food industry to prevent the spread of *Listeria*.

In the dissertation, [doctoral student](#) Christopher Andersson also describes the discovery of two new molecules that combat the pathogenicity of the *Listeria* bacterium. The researchers also studied how the molecules can be used to prevent the bacterium from causing disease.

For healthy individuals, the *Listeria* bacterium usually causes no extreme harm apart from a few days of stomach problems. For individuals with a compromised [immune system](#) or for [pregnant women](#), however, the bacterium can be very dangerous. If a bacterial infection spreads to the brain it can progress to "listeriosis", which has a mortality rate of 20-30 percent. If a pregnant woman is infected, the bacteria can spread to the foetus and cause miscarriage.

"Hopefully, this new knowledge on how light and these small molecules

affect the bacterium can, in future, be used to prevent the spread of *Listeria* and help treat listeriosis," says Christopher Andersson, doctoral student at the Department of Molecular Biology at Umeå University and author of the dissertation.

**More information:** [umu.diva-portal.org/smash/record.jsf?pid=diva2%3A893603&dswid=newPopUp](https://umu.diva-portal.org/smash/record.jsf?pid=diva2%3A893603&dswid=newPopUp)

Provided by Umea University

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